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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PIAZZA CORCORAN, GLADYS JOSEFINA	
ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 10/08/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/981,599	PUPPIN, GIUSEPPE	
	Examiner	Art Unit	
	Gladys J Piazza Corcoran	1733	

-- The MAILING DATE of this communication appears on the c ver sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *41-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *41-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 41-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 41 is unclear by reciting a step of extruding rigid thermoplastic onto at least two predetermined areas of said fabric and then reciting a separate step of coating said pre-determined areas with rigid thermoplastic to create a composite. It is unclear as to whether the same thermoplastic is extruded and coated onto the pre-determined areas or one thermoplastic is extruded onto the areas and then a separate thermoplastic is extruded onto the areas. The specification recites that only one rigid thermoplastic is extruded and coated onto the pre-determined areas. It is suggested to amend the claim to clarify that the rigid thermoplastic is extrusion coated on the predetermined areas.

4. Claim 42 is unclear by reciting a step of extruding flexible thermoplastic upon said hinged region, while claim 41 (from which 42 depends) recites that the pre-determined areas are separated by a linear flexible hinged region free of thermoplastic. It is unclear how the hinged area free of thermoplastic can have a step of extruded thermoplastic on the area. It is suggested to amend claim 41 to recite in line four, --extruding a first rigid thermoplastic--, in line 6 –with said first rigid thermoplastic--, and in line 9 –of said first rigid thermoplastic--; and to amend claim 42 to recite –a second

flexible thermoplastic--; and to amend any subsequent claims to clearly recite which thermoplastic is being referred to.

5. Claim 45 recites the limitation "the polymer composition" in line 9. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 45 recites the limitation "said rigid areas" in line 13. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 46 recites the limitation "said hinged regions" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 47 recites the limitation "said fabric" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to --said glass fabric--.

9. Claim 48 recites the limitation "said hinged regions" in line 2 and lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 48 recites the limitation "said fabric" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to --said glass fabric--.

11. Claim 49 recites the limitation "said hinged region" in line 1. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 49 is unclear by reciting that the fabric of the hinged region is entirely incorporated within said flexible thermoplastic. The Specification only discloses providing rigid thermoplastic on either side of the hinged region and then flexible thermoplastic on one or both sides of the hinged region. Thus, it is unclear how the

fabric can be entirely incorporated within the flexible thermoplastic. It is suggested to amend the claim to recite that the thermoplastic is on one or both sides of the hinged region.

13. Claim 50 recites the limitation "said fabric" twice in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to --said glass fabric--; in addition it is suggested to amend line 3 to --introducing said glass fabric-- in order to avoid the confusion of whether or not it is the same fabric or a second fabric.

14. Claim 50 recites the limitation "said extrusion die" in line 3. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend claim 45 to include an extrusion die.

15. Claim 51 recites the limitation "said hinged regions" in line 9. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to --said hinged region--.

16. Claim 52 recites the limitation "said hinged fabric regions" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to --said hinged region--.

17. Claim 53 recites the limitation "said hinged regions" in line 1. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to --said hinged region--.

18. Claim 52 is unclear by reciting a step of co-extruding flexible thermoplastic upon said hinged region, while claim 51 (from which 52 depends) recites that the pre-determined areas are separated by a flexible hinged region free of thermoplastic. It is

unclear how the hinged area free of thermoplastic can have a step of extruded thermoplastic on the area. It is suggested to amend claim 51 to recite a first rigid thermoplastic with the hinged area free of the first rigid area and then amend claim 52 to recite a second flexible thermoplastic.

Claim Rejections - 35 USC § 102

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

20. Claims 41, 44, 51 are rejected under 35 U.S.C. 102(e) as being anticipated by Hettinga (US Patent No. 5,945,053).

Hettinga discloses a method of making a hinged composite structure by introducing fabric (18) to the interior of an extrusion die (10), extruding rigid thermoplastic (extrusion material; column 3, lines 3-5) onto at least two predetermined areas of the fabric (column 4, lines 30-40), coating the pre-determined areas with rigid thermoplastic to create a composite (first and second members 38 and 40), and where the pre-determined areas are separated by a linear flexible hinged region free of thermoplastic (column 4, lines 30-40). As to claim 44, the composite is drawn through a shaping die after coating where pre-determined portions of the first and second rigid

areas are made non-coplanar (the composite is forced through the extrusion cavity where mandrels 30, and 32 have tapered ends that produce non-coplanar areas of the rigid areas; column 4, lines 55-62). As to claim 51, the pre-determined rigid areas are separated by at least one flexible hinged region free of thermoplastic (column 4, lines 30-40), the composite is removed from the extrusion die (column 3, lines 15-20), cooled (allows to cool at room temperature), and the rigid areas are rotated relative to each other about the hinged regions to form the profile (column 5, lines 5-10, 29-30).

21. Claims 41, 42, 51, 52 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaplo (US Patent No. 6,294,729).

Kaplo discloses a method of making a hinged composite structure by introducing fabric (fabric 20) to the interior of an extrusion die (die 44), extruding rigid thermoplastic (column 2, lines 50-55) onto at least two predetermined areas of the fabric (see figures), coating the pre-determined areas with rigid thermoplastic to create a composite (see figures), and where the pre-determined areas are separated by a linear flexible hinged region free of thermoplastic (hinge are 126 is free of the more rigid thermoplastic material).

As to claim 42, flexible thermoplastic is extruded onto the hinged region (area 126). As to claim 51, the pre-determined rigid areas are separated by at least one flexible hinged region free of thermoplastic (hinge area 126 is free of the more rigid thermoplastic material), the composite is removed from the extrusion die and cooled (allows to cool at room temperature), and the rigid areas are rotated relative to each other about the hinged regions to form the profile (the hinge area allows the rigid areas

to be rotated about the hinged regions). As to claim 52, flexible thermoplastic is extruded onto the hinged region (area 126).

22. Claim 45 is rejected under 35 U.S.C. 102(b) as being anticipated by Kohl (US Patent No. 4,788,088).

Kohl discloses a method for making a hinged composite structure by introducing glass fabric (column 7, lines 41, 42, 55) into a shaping station (mandrel 32) including a shaping block to produce a pre-formed fabric shape conforming to the shape of the hinged composite, introducing at least one rigid thermoplastic into a co-extruder having inlet zones and combining zones wherein the thermoplastic and pre-formed shaped fabric are combined to form the composite structure under conditions of sufficient pressure, temperature and shear to cause the polymer composition to penetrate and wet individual glass fibers to the extent that the polymer composition substantially coats the glass fibers in the glass fabric (column 5, lines 35-45), extruding the thermoplastic fabric composite through a shaping die to form the structure wherein the properties of the rigid areas (45-55) comprise a modulus of elasticity of about 830 kpsi or greater, a coefficient of thermal expansion of about 0.000022 in/in/F or less, a shrinkage not exceeding about 0.28%, and an impact of about 10 in-lbs or greater (Kohl discloses the same products (column 3, lines 55-68), the same materials and the same methods as Applicant, therefore it is considered the areas have the same properties).

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

24. Claims 42, 52, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hettinga (US Patent No. 5,945,053) as applied to claim 41 above and further in view of Bemis (US Patent No. 4,769,199) and/or Kaplo (US Patent No. 6,294,729).

The method of Hettinga leaves the fabric hinged portion free of thermoplastic. However, it is known in the art to apply flexible thermoplastic to hinged portions of fabric hinges in order to provide a more stable, flexible hinge. For example, Bemis and/or Kaplo both show examples of method of providing a more flexible thermoplastic in the hinged region. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the hinge region of the composite in Hettinga with a flexible thermoplastic in order to provide a flexible stable hinge area as exemplified by Bemis and/or Kaplo, only the expected results would be attained.

25. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohl (US Patent No. 4,788,088) as applied to claim 45 above.

It appears as discussed above that the rigid areas in Kohl would have the same properties as claimed by applicant. Additionally, it would have been well within the purview of one of ordinary skill in the art to select the appropriate properties required for the final product, particularly since Kohl discloses producing the same products as Applicant (column 3, lines 55-68), using the same materials as Applicant, and using the same method as Applicant. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of producing a composite as shown by

Kohl by providing the composite with the requisite properties for the particular end product as is well within the purview of one of ordinary skill in the art, only the expected results would be attained.

26. Claims 41-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bemis (US Patent No. 4,769,199) in view of Van Vliet (US Patent No. 2,607,411) and Shanok et al. (US Patent No. 3,245,864).

Bemis discloses a method of making a hinged structure by extruding rigid thermoplastic into at least two predetermined areas separated by a hinged region free of the rigid thermoplastic. It is known in the art as exemplified by Van Vliet to reinforce plastic hinges with a fabric material in order to limit the stretch of the hinge member without reducing its flexibility (column 2, lines 1-10). It is also known in the art as exemplified by Shanok to encase a fabric layer with an extruded thermoplastic layer by introducing the fabric to the interior of an extrusion die, and extruding the thermoplastic to coat the fabric. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of extruding a thermoplastic hinge as shown by Bemis with a fabric reinforcement in order to limit the stretch of the hinge member without reducing its flexibility as shown by Van Vliet particularly since it is known how to extrude thermoplastic material around a fabric web as shown by Shanok.

As to claim 42, Bemis discloses extruding flexible thermoplastic on the hinged region (15). As to claim 43, Shanok discloses prefolding/preshaping the fabric web prior to introducing into the extruding die in order to form a strip with out wrinkling and Bemis discloses a folded shaped hinge, therefore one practicing the method of Bemis in view

of Van Vliet and Shanok would fold the fabric layer edge prior to combining with the thermoplastic. As to claim 44, the hinge member in Bemis is drawn through a shaping die(calibration station 32) after extruding (which is the coating step in view of Van Vliet and Shanok) where predetermined portions of the first and second areas are made non-coplanar (the side areas of the hinge are not coplanar to each other and are shaped in the calibration station; column 4, lines 51-68). As to claim 45, although the references do not specifically disclose the type of fabric used in the hinge, it is well known to use glass fabric for reinforcing plastic structures and it would have been well within the purview of one of ordinary skill in the art to select such a well known and commonly used fabric, only the expected results would be attained. Additionally, Shanok discloses introducing the fabric into a shaping station block to produce a pre-formed fabric shape conforming to the shape of the structure (column 4, lines 30-53). Bemis discloses introducing at least one rigid thermoplastic into a co-extruder having inlet zones and combining zones where the thermoplastic is extruded, and Shanok discloses combining the fabric and thermoplastic to form the composite structure under conditions of sufficient pressure, temperature and shear to cause the polymer to penetrate and wet the individual fibbers to coat the fabric, and the composite is extruded through a shaping die. As to the particular properties of the rigid areas, it would have been well within the purview of one of ordinary skill in the art to select the appropriate properties required for the final product, particularly since the references disclose producing the same products as Applicant, using the same materials as Applicant, and using the same method as Applicant. It would have been obvious to one of ordinary skill in the art at the time of the

invention to provide the method of producing a composite as shown by Kohl by providing the composite with the requisite properties for the particular end product as is well within the purview of one of ordinary skill in the art, only the expected results would be attained. As to claim 46, Bemis discloses extruding flexible thermoplastic on the hinged region (15). As to claim 47, Shanok discloses prefolding/preshaping the fabric web prior to introducing into the extruding die in order to form a strip with out wrinkling and Bemis discloses a folded shaped hinge, therefore one practicing the method of Bemis in view of Van Vliet and Shanok would fold the fabric layer edge prior to combining with the thermoplastic. As to claim 48, Bemis discloses extruding flexible thermoplastic on the hinged region (15) and Shanok discloses extruding the thermoplastic at sufficient temperature and pressure in order to bond the thermoplastic to the fabric layer. As to claim 49, the references Van Vliet and Shanok disclose the fabric in the hinged region is incorporated within the thermoplastic material. As to claim 50, Shanok discloses prefolding/preshaping the fabric web prior to introducing into the extruding die in order to form a strip with out wrinkling and Bemis discloses the edges of the hinge are folded inward, therefore one practicing the method of Bemis in view of Van Vliet and Shanok would fold the fabric layer edge prior to combining with the thermoplastic. As to claim 51, Bemis discloses the pre-determined rigid areas are separated by at least one flexible hinged region free of thermoplastic (hinge area 15 is free of the more rigid thermoplastic material), the composite is removed from the extrusion die and cooled (cooling station 33), and the rigid areas are rotated relative to each other about the hinged regions to form the profile (the side walls are rotatable

about the hinged areas, see figure 1). As to claim 52, Bemis discloses extruding flexible thermoplastic on the hinged region (15). As to claim 53, the references Van Vliet and Shanok disclose the fabric in the hinged region is incorporated within the thermoplastic material. As to claim 54, Shanok discloses prefolding/preshaping the fabric web prior to introducing into the extruding die in order to form a strip with out wrinkling and Bemis discloses the edges of the hinge are folded inward, therefore one practicing the method of Bemis in view of Van Vliet and Shanok would fold the fabric layer edge prior to combining with the thermoplastic.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is (703) 305-1271. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gladys J Piazza Corcoran
Examiner
Art Unit 1733

GJPC